2-9 have been overcome or are improper in view of the amendments and for the reason set forth below.

In the Office Action, Claim 2-9 and 11 are rejected under 35 U.S.C. § 112, first paragraph. As previously discussed, Claim 11 has been cancelled and Claims 2-4 and 8 have been amended to depend from newly added Claim 12. Applicants note for the record that the amendments to Claims 2-4 and 8 were made to change the dependency of the claims and for clarification purposes and therefore submit that the changes have no narrowing effect on the claimed subject matter as required by Claims 2-4 and 8.

Further, Applicants submit that newly added Claim 12 is clearly supported by the Specification and therefore adds no new matter. Therefore, Applicants submit that the pending claims fully comply with 35 U.S.C. § 112.

Accordingly, Applicants respectfully request that this rejection be withdrawn.

In the Office Action, Claims 2-9 and 11 are rejected under 35 U.S.C. § 103(a). More specifically, Claims 11, 2-5 and 7-9 are rejected as being unpatentable over European Patent No. 0724305A1 ("*Akashi*") in view of U.S. Patent No. 5,522,127 ("*Ozaki*"); Claims 11, 5-6 and 8-10 are rejected as being unpatentable over European Patent No. 0845824A1 ("*Nakane*") in view of *Ozaki*; Claims 2-4 and 7 are rejected as being unpatentable over *Nakane* in view of *Ozaki* and further in view of U.S. Patent No. 5,240,790 ("*Chua*") or U.S. Patent No. 5,219,679 ("*Abraham*").

At the outset, Claim 11 has been cancelled as previously discussed. Accordingly, Applicants submit that the rejection of Claim 11 under 35 U.S.C. § 103 has been rendered moot and thus should be withdrawn.

As previously discussed, Claim 12 has been newly added. Newly added Claim 12 recites a gel electrolyte secondary cell that includes a positive electrode, a negative electrode and a gel

electrolyte. The negative electrode of Claim 12 includes a carbonaceous material that comprises a plurality of meso-carbon micro-beads. The gel electrolyte of Claim 12 includes, in part, a high-molecular weight material that has a number average molecular weight ranging from 5000 to 500000.

Applicants have uniquely discovered that a gel electrolyte secondary cell which combines, for example, a negative electrode composed of meso-carbon micro-beads and a gel electrolyte composed of a high-molecular weight material effectively achieves a large discharge capacity and a high charging/discharging efficiency as compared to electro-chemical cells that employ typical non-aqueous electrolytes.

The remaining pending claims each depend either directly or indirectly from newly added Claim 12 as previously discussed. Applicants therefore respectfully submit that pending Claims 2-9 and 12 are clearly distinguishable and thus allowable over the cited references, alone or in any hypothetical combination, for the reasons set forth below.

With respect to the obviousness rejection in view of *Akashi* and *Ozaki*, Applicants respectfully submit that the Patent Office has failed to establish a *prima facie* case of obviousness. First, Applicants question whether these references can even be combined in the first place.

Applicants respectfully remind the Patent Office that the motivation to combine the references must exist within the references themselves or flow from knowledge generally known to one skilled in the art and not the claimed invention. To this end, the Court of Appeals for the Federal Circuit has held that the *prima facie* burden of obviousness may only be overcome "by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings." *In re Fine*, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988).

What the Patent Office clearly has done is to selectively pick and choose the gel electrolyte teachings of *Akashi* and the negative electrode teachings of *Ozaki* to allegedly arrive at the claimed invention. However, *Ozaki* relates to a non-aqueous electrolyte secondary cell, particularly the negative electrode component thereof. *See*, *Ozaki*, Abstract. Moreover, *Ozaki* clearly states that the organic solvent of the organic electrolyte employed within the non-aqueous electrolyte cell cannot be propylene carbonate because it decomposes to generate a gas during charging. *See*, *Ozaki*, column 7, lines 5-8. In contrast, *Akashi* relates to a gel electrolyte which can be employed in a lithium-type secondary cell instead of a non-aqueous electrolyte solution. *See*, *Akashi*, page 2, lines 6-7. Further, *Akashi* discloses that propylene carbonate is a preferable solvent because an electric potential window of this type of compound can impart a high ionic conductivity to the gel electrolyte. *See*, *Akashi*, page 4, lines 3-6.

Thus, nowhere do either of these references teach or suggest both a gel electrolyte, particularly one that includes propylene carbonate, and a negative electrode that includes meso-phased carbon micro-beads. Moreover, *Ozaki* effectively teaches away from the use of propylene carbonate, let alone its use within a gel electrolyte. Indeed, the Court of Appeals for the Federal Circuit has held "there is no suggestion to combine ... if a reference [*Ozaki*] teaches away from its combination with another source." *Tec Air, Inc. v. Denso Manufacturing Michigan Inc.*, 52 U.S.P.Q. 2d 1294 (Fed. Cir. 1999).

Even if combinable, nowhere do the references teach or suggest each and every feature of the claimed invention. One skilled in the art, in theory, may look to the combined teaching of the cited references to explain what one aspect of the claimed invention discloses. However, the Court of Appeals for the Federal Circuit has criticized this motivation to combine analysis as being

"hindsight reconstructive" because the motivation to the combine the cited references was first disclosed in the claimed invention. *In re O'Farrell*, 7 U.S.P.Q. 2d 1673, 1680-81 (Fed. Cir. 1988).

Based on the fact that the Patent Office fails to establish a *prima facie* case of obviousness because it fails to establish a motivation to combine the references and because the references, alone or in combination, fail to teach or suggest the features of the claimed invention as required by independent Claim 12, Applicants submit that this rejection is improper.

Accordingly, Applicants respectfully request that the obviousness rejection in view of *Ozaki* and *Akashi* be withdrawn.

With respect to the obviousness rejection in view of *Nakane* and *Ozaki*, Applicants again respectfully submit that the Patent Office has failed to establish a *prima facie* case of obviousness. The Patent Office essentially relies on *Nakane* for its teachings regarding a gel-type electrolyte which can include organic solvents, such as propylene carbonate. As previously discussed *Ozaki* is relied upon primarily for its teaching regarding a negative electrode.

At the outset, Applicants again respectfully submit that the Patent Office has failed to establish that there exists a motivation to combine *Nakane* with *Ozaki*. *Nakane*, similar to *Akashi*, discloses the use of propylene carbonate. As previously discussed, *Ozaki* fails to teach or suggest to the extent that it effectively teaches away from the use of propylene carbonate. Thus, nowhere do either of these references teach or suggest both a gel electrolyte and a negative electrode composed of meso-carbon micro-beads. Accordingly, Applicants question how these references can even be combined.

Even if combinable, Applicants respectfully submit that nowhere do these references, alone or in combination, teach or suggest each and every feature of the claimed invention. Of course, a

"hindsight reconstructive" analysis is not the proper analysis for determining patentability as previously discussed.

Based on the fact that the Patent Office fails to establish a *prima facie* case of obviousness because it fails to establish a motivation to combine these references and because these references, alone or in combination, fail to teach or suggest the features of the claimed invention as required by independent Claim 12, Applicants submit that this rejection is improper and accordingly respectfully request that this rejection be withdrawn.

With respect to the obviousness rejection in view of *Nakane*, *Ozaki* and further in view of *Chua* or *Abraham*, Applicants submit that these references, alone or in any hypothetical combination, fail to teach or suggest each and every feature of the claimed invention. First, Applicants question whether *Nakane* and *Ozaki* can even be combinable at previously discussed. Even if combinable, *Chua* and *Abraham* fail to remedy the deficiency of *Nakane* and *Ozaki*. The Patent Office primarily relies on *Ozaki* for its teaching regarding a negative electrode in an attempt to overcome the deficiency of *Nakane* regarding same. Further, the Patent Office admits that *Nakane* fails to disclose a gel electrolyte that includes a high-molecular weight material.

To the extent that *Chua* and/or *Abraham* are even combinable, Applicants respectfully submit that nowhere do either of these references teach or suggest a gel electrolyte that includes a high-molecular material, let alone one that has a number average molecular weight ranging from 5000 to 500000 as required by independent Claim 12. Although *Chua* discloses various weight percents of compounds that can be utilized within a solid gelled film electrolyte, nowhere does it teach or suggest the number average molecular weight of such compounds, let alone a number average molecular weight that ranges from 5000 to 500000 as required by independent Claim 12. Moreover, *Abraham* relates to solid electrolytes and <u>not</u> gel electrolytes.

Based on the fact that the references, even if combinable, fail to teach or suggest each and every feature of the claimed invention, Applicants submit that the references, alone or in combination, fail to render obvious the claimed invention.

Accordingly, Applicants respectfully request that this rejection be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the above-identified patent application is now in a condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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APPENDIX

2. (Twice Amended) The gel electrolyte secondary cell according to Claim 12 wherein the gel electrolyte comprises a non-aqueous liquid electrolyte containing a non-aqueous solvent and an electrolyte salt and the high-molecular material weight having a nitrile group in its side chain.

3. (Twice Amended) The gel electrolyte secondary cell according to Claim 12 wherein the high-molecular material weight having a nitrile group in its side chain is polyacrylonitrile.

4. (Twice Amended) The gel electrolyte secondary cell according to Claim 12 wherein the high-molecular material weight having a nitrile group in its side chain is polyacrylonitrile and wherein the molar ratio of the acrylonitrile monomer to the non-aqueous solvent is 5.95 to 30:70.

8. (Twice Amended) The gel electrolyte secondary cell according to Claim 12 wherein the positive electrode contains a lithium-coated compound.